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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,222	07/03/2003	Masatoshi Akagawa	300.1119	5751
21171	7590	06/14/2007		
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER CHANG, RICK KILTAE	
			ART UNIT 3726	PAPER NUMBER
			MAIL DATE 06/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/612,222	Applicant(s) AKAGAWA ET AL.	
	Examiner Rick K. Chang	Art Unit 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2007.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36, 49 and 50 is/are pending in the application.
 4a) Of the above claim(s) 3, 9, 10, 21, 27, 28 and 49 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1, 2, 4-8, 11-20, 22-26, 29-36 and 50 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/29/07 has been entered.
2. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Election/Restrictions

3. Newly submitted claim 49 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the process as claimed can be practiced by another and materially different apparatus such as a camcorder.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 49 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4-8, 11-13, 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Leedy (US 5,103,557).

Leedy discloses a first detection step (col. 5, lines 1-68 and col. 6, lines 1-44); Figs. 4a-4b show first holding step and a first correction step; col. 6, lines 45-68 and entire col. 7 disclose E-beam means (maskless), forming vias and additional insulating layers. Col. 6, lines 45-47 states

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that the modified net list is used to form interconnect patterns. The process involves depositing a layer of insulation over the wafer surface and forming metal deposited vias to connect with the underlying electrical components formed under the insulation layer (col. 6, lines 48-64). Col. 6, lines 65-68 and col. 7 state that the metallization is repeated.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 19-20, 22-26, 29-36 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leedy (US 5,103,557) in view of Kulkarni et al (US 5,991,699).

Leedy teaches the invention as described with respect to claims 1-2, 4-8, 11-13, 15, and 17 above, except for imaging means and an optical reading device and a second correction step of correcting the design data so as to move the wiring line away from the terminal of the other electronic component.

Kulkarni discloses in a number of figures, for example Figs. 3 and 10b), identifying defects and issuing corrective actions and imaging means (col. 6, lines 8-34) and an optical reading device (col. 5, line 10 US Patent No. 4,618,938 discloses a camera).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Leedy by identifying defects such as a terminal is displaced and intersects with a wiring line and correcting the design data so as to move the wiring line away from the

terminal of the other electronic component and providing imaging means and an optical reading device, as taught by Kulkarni, for the purpose of reducing total number of defects to the electronic components and providing defects in a digitized format.

8. Claims 14, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leedy (US 5,103,557) in view of Kulkarni et al (US 5,991,699).

Leedy fails to disclose a second correction step of correcting the design data so as to move the wiring line away from the terminal of the other electronic component.

Kulkarni discloses in numerous figures, for example Figs. 3 and 10b), indentifying defects and issuing corrective actions.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Leedy by identifying defects such as a terminal is displaced and intersects with a wiring line and correcting the design data so as to move the wiring line away from the terminal of the other electronic component, as taught by Kulkarni, for the purpose of reducing total number of defects to the electronic components.

Response to Arguments

9. Applicant's arguments filed 11/14/06 have been fully considered but they are not persuasive.

Means plus function language used in claim 49 is referring to an apparatus, while claim 1 'ing language is referring to steps. Therefore, they are different inventions. Further, Newly submitted claim 49 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the process as claimed can be practiced by another and materially different apparatus such as a camcorder. Since applicant has received an action

on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 49 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

The examiner maintains his rejections. Leedy discloses that "the data resulting from the tester signal process is a list of the location of each defective transistors or ICLUs" (col. 5, lines 33-35). This anticipates the detecting step in claim 1, lines 4-5. Then, Leedy discloses "this list is automatically communicated to the conventional CAD means from the tester signal processor. the CAD means then, by special software algorithms works out an interconnect strategy for each die" (col. 5, lines 35-39). This anticipates that the software calculates a displacement between the design position of the first electronic component and the actual position of the first electronic component on the surface of the board, and holding the displacement as first displacement data (the software is installed in a hard drive of a computer, which stores all data regarding the wafer). Thereafter, Leedy discloses "the master placemnet scheme of the net list is modified in terms of the placement of the defective ICLUs so as to bypass the defective ICLUs and interconnect defect-free ICLUs from the stock of redundant ICLUs" (col. 5, lines 39-43). This anticipates correcting design data to be used for processing the board. Col. 6, lines 45-47 discloses that the modified net list is next used to produce the database for the desired interconnect patterns on the wafer using E-beam means. Subsequently, depositing a layer of

insulation over the wafer surface, then a layer of metal is deposited over the insulation layer (col. 6, lines 47-58).

Leedy calculates a displacement between the design position of first electronic component and the actual position of the first electronic component. Otherwise, it would not be possible to generate rerouting scheme.

Interviews After Final

10. Applicant note that an interview after a final rejection must be submitted briefly in writing the intended purpose and content of the interview (the agenda of the interview must be in writing). Upon review of the agenda, the Examiner may grant the interview if the examiner is convinced that disposal or clarification for appeal may be accomplished with only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.

Conclusion

11. Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity (optional). Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (571) 272-4564. The examiner can normally be reached on 5:30 AM to 1:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rick K. Chang/
Primary Examiner, A.U. 3726

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June 7, 2007